

REMARKS

Claim Status

By this response, claims 1, 27, 28, 29, 60, and 75 are amended. Claims 1-22, 26-34, 60-63, and 74-77 are pending.

Claim Rejections - 35 U.S.C. §102

The Office Action rejected claims 60-62 and 77 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,397,628 to Watanabe et al. (herein "Watanabe et al."). Applicant respectfully submits that amended independent claim 60 and claims 61, 62, and 77 that depend from claim 60 are not anticipated by Watanabe et al., because claim 60 recites features that are not disclosed or suggested by Watanabe et al. For example, claim 60 recites providing one or more protrusions that extend radially outward from an annular surface of a valve seat insert. Watanabe et al discloses an orifice member 260 that has a valve seat 262 and a projection 280 at the end of the orifice member (see Fig. 8). Each of the embodiments include a similar projection (see Figs. 3, 5, 10 and 12). None of these projections extend radially outward from an annular surface as defined by claim 60. Further, if the projections were to extend radially outward from the annular surface, it would not be possible to mount the valve seat in the valve body of Watanabe et al.

Applicant also notes that the Office Action asserts that "corners of element 100" are protrusions that would dig into brass member 10 of Watanabe et al. Applicant respectfully points out that the corners of element 100 do not extend radially outward from an annular surface as recited by amended claim 60. Amended claim 60 is not anticipated by Watanabe et al. and is in condition for allowance.

Claims 61, 62, and 77 depend from claim 60 and are allowable for at least the reasons claim 60 is allowable.

Claim Rejections - 35 U.S.C. §103

The Office Action rejected claims 1-6, 13, 15-22, 27-29, 31, and 74-76 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 1,947,257 to Fritz et al. (herein "Fritz et al.") in view of U.S. Patent No. 5,851,004 to Wu et al. (herein "Wu et al."). The Office Action rejected claims 7-9, 30, and 33 under 35 U.S.C. 103(a) as being unpatentable over Fritz et al. in view of Wu et al. and U.S. Patent No. 5,211,373 to Baker (herein "Baker"). The Office Action rejected claims 10, 26, and 32 under 35 U.S.C. 103(a) as being unpatentable over Fritz et al. in view of Wu et al. and U.S. Patent No. 6,341,758 to Shih et al. (herein "Shih et al."). The Office Action rejected claims 11, 12, and 14 under 35 U.S.C. 103(a) as being unpatentable over Fritz et al. in view of Wu et al. and U.S. Patent No. 6,786,471 to Nakata et al. (herein "Nakata et al."). The Office Action rejected claim 63 under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of U.S. Patent No. 3,633,874 to Veugelers, Jr. (herein "Veugelers, Jr.").

Independent Claim 1

Amended claim 1 is patentable over Fritz et al. and Wu et al., because claim 1 recites features that are not shown or suggested by Fritz et al. or Wu et al. For example, claim 1 recites a valve seat that includes one or more protrusions that extend radially outward from an annular surface of the valve seat and that penetrate into a surface of a portion of a valve body. In Fritz et al., the layers of rubber 38, 39 of the seat are clamped between the body members 10 and 11 and do not penetrate into a surface of the body members. Wu et al. also does not disclose or suggest a valve seat that includes one or more protrusions that extend radially outward from an annular surface of the valve seat and that penetrate into a surface of a portion of a valve body. The Office Action relies on Wu et al. for its teaching of a metal diaphragm. Amended claim 1 is in condition for allowance.

Claims 2-6, 13, 15, 16, 74 and 75 depend from claim 1 and are allowable for at least the reasons claim 1 is allowable.

Claims 7-9 depend from claim 1. Baker also does not disclose a valve seat that includes one or more protrusions that extend radially outward from an annular surface

of the valve seat and that penetrate into a surface of a portion of a valve body. The Office Action relies on Baker for its teaching of a case hardened valve seat. Claims 7-9 are patentable over Fritz et al., Wu et al. and Baker.

Claim 10 depends from claim 1. Shih et al also does not disclose a valve seat that includes one or more protrusions that extend radially outward from an annular surface of the valve seat and that penetrate into a surface of a portion of a valve body. The Office Action relies on Shih et al. for its teaching of a seat that is harder than a diaphragm. Claim 10 is patentable over Fritz et al., Wu et al. and Shih et al.

Claims 11, 12, and 14 depend from claim 1. Nakata et al. also does not disclose a valve seat that includes one or more protrusions that extend radially outward from an annular surface of the valve seat and that penetrate into a surface of a portion of a valve body. The Office Action relies on Nakata et al. for its alleged prior art teaching of a metal valve seat. Claims 11, 12, and 14 are patentable over Fritz et al., Wu et al. and Nakata et al.

Independent Claim 17

Amended claim 17 is patentable over Wu et al. and Fritz et al., because amended claim 17 recites features that are not shown or suggested by the combined teachings of Wu et al. and Fritz et al. For example, claim 17 recites a valve seat with an outer circumferential surface that includes one or more protrusions that a portion of the valve body is deformed around such that the one or more protrusions penetrate a surface of the portion to secure the valve seat to the valve body. Claim 17 is in condition for allowance.

Claims 18-22 and 76 depend from claim 17 and are allowable for at least the reasons that claim 17 is allowable.

Claim 26 depends from claim 17. Shih et al also does not disclose a valve seat with an outer circumferential surface that includes one or more protrusions that a portion of the valve body is deformed around such that the one or more protrusions penetrate a

surface of said portion to secure the valve seat to the valve body. Claim 26 is patentable over Fritz et al., Wu et al. and Shih et al.

Independent Claim 27

Amended claim 27 is patentable over Wu et al. and Fritz et al., because claim 27 recites features that are not disclosed or suggested by Wu et al. or Fritz et al.. For example, claim 27 recites one or more valve seat protrusions that are configured to penetrate into a surface of a portion of a valve body to secure and seal the valve seat to the valve body. Claim 27 is in condition for allowance.

Claims 28, 29, 31 and 34 depend from claim 27 and are allowable for at least the reasons claim 27 is allowable. Applicant respectfully points out that the Office Action does not address claim 34.

Claims 30 and 33 depend from claim 27. Baker also does not disclose one or more valve seat protrusions that are configured to penetrate into a surface of a portion of a valve body to secure and seal the valve seat to the valve body. Claims 30 and 33 are patentable over Fritz et al., Wu et al. and Baker.

Claim 32 depends from claim 27. Shih et al also does not disclose one or more valve seat protrusions that are configured to penetrate into a surface of a portion of a valve body to secure and seal the valve seat to the valve body. Claim 32 is patentable over Fritz et al., Wu et al. and Shih et al.

Dependent Claim 63


Claim 63 depends from claim 60. Veugelers, Jr. also does not disclose or suggest providing one or more protrusions that extend radially outward from an annular surface of a valve seat insert. The Office Action relies on Veugelers, Jr. for its teaching of a rubber diaphragm. Claim 63 is in condition for allowance.

The application as amended is believed to be in condition for allowance and favorable reconsideration as requested.

Should the Commissioner decide that any fee or fee deficiency is due, the Commissioner is hereby authorized to charge any and all such other fees incurred as a result of entering this amendment and response to deposit account number 03-0172, order number 22188/07058.

Respectfully submitted,

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